



Under the Paperwork Reduction Act of 1995, no person is required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Sheet 01

of 18

Complete if Known

Application Number	10/810,410
Filing Date	March 26, 2004
First Named Inventor	Ismail Lakkis
Art Unit	2611
Examiner Name	Kevin Kim
Attorney Docket Number	00287

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)			
		US-			
		US- 4001693	01-1977	Stackhouse et al.	
		US- 4039972	08-02-1977	Scholten et al.	
		US- 4278978	06-14-1981	Easterling et al.	
		US- 4317210	02-23-1982	Dekker et al.	
		US- 4498174	02-1985	LeGresley	
		US- 4569052	02-1986	Cohen et al.	
		US- 4707839	11-17-1987	Andren et al.	
		US- 4847876	07-1989	Baumbach et al.	
		US- 4860003	08-22-1989	DeLuca et al.	
		US- 4905234	02-27-1990	Childress et al.	
		US- 5041836	08-20-1991	Paschen et al.	
		US- 5087835	02-11-1992	Hattangadi	
		US- 5109390	04-28-1992	Gilhausen et al.	
		US- 5170412	12-08-1992	Massey	
		US- 5177765	01-1993	Holland et al.	
		US- 5177767	01-1993	Kato	
		US- 5260976	11-09-1993	Dolivo et al.	
		US- 5377223	12-1994	Schilling	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T ⁶
		Country Code ³ -Number ⁴ -Kind Code ⁵ (if known)				

Examiner
SignatureDate
Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Sheet 02

of 18

Complete if Known

Application Number	10/810,410
Filing Date	March 26, 2004
First Named Inventor	Ismail Lakkis
Art Unit	2611
Examiner Name	Kevin Kim
Attorney Docket Number	00287

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)			
		US- 5389939	02-14-1995	Tang et al.	
		US- 5396110	03-07-1995	Houston	
		US- 5416767	05-1995	Koppelaar et al.	
		US- 5422952	06-06-1995	Kennedy et al.	
		US- 5457702	10-1995	Williams et al.	
		US- 5467367	11-1995	Izumi et al.	
		US- 5555183	09-10-1996	Willard et al.	
		US- 5561468	10-01-1996	Bryan et al.	
		US- 5590399	12-1996	Kasamatsu	
		US- 5606729	02-1997	D'Amico et al.	
		US- 5633889	05-1997	Schilling et al.	
		US- 5642391	06-24-1997	Ewell et al.	
		US- 5644568	07-01-1997	Ayerst et al.	
		US- 5677927	10-1997	Fullerton et al.	
		US- 5680419	10-21-1997	Bottomley	
		US- 5734963	03-31-1998	Fitzgeralds et al.	
		US- 5757766	05-1998	Sugita	
		US- 5784387	07-21-1998	Widmer	
		US- 5787118	07-28-1998	Ueda	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T ⁶
		Country Code ³ -Number ⁴ -Kind Code ⁵ (if known)				

Examiner
SignatureDate
Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Sheet 03

of 18

Complete if Known

Application Number	10/810,410
Filing Date	March 26, 2004
First Named Inventor	Ismail Lakkis
Art Unit	2611
Examiner Name	Kevin Kim
Attorney Docket Number	00287

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)			
		US- 5790591	08-1998	Gold et al.	
		US- 5793756	08-11-1998	Ayerst et al.	
		US- 5809060	09-1998	Cafarella et al.	
		US- 5822359	10-1998	Bruckert et al.	
		US- 5835498	11-1998	Kim et al.	
		US- 5852770	12-1998	Kasamatsu	
		US- 5867478	02-02-1999	Baum et al.	
		US- 5870432	02-1999	Kerckhove	
		US- 5903556	05-1999	Matui	
		US- 5926503	06-20-1999	Kelton et al.	
		US- 5930296	07-1999	Kot	
		US- 5943331	08-1999	Lavean	
		US- 5978412	11-1999	Takai	
		US- 5987079	11-16-1999	Scott, et al.	
		US- 5991308	11-23-1999	Fuhrmann et al.	
		US- 5991331	11-23-1999	Chennakeshu et al.	
		US- 6005640	12-1999	Strolle et al.	
		US- 6012161	01-04-2000	Ariyavisitakul	
		US- 6023783	02-08-2000	Divsalar	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T ⁶
		Country Code ³ -Number ⁴ -Kind Code ⁵ (if known)				

Examiner
SignatureDate
Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Sheet 04

of 18

Complete if Known

Application Number	10/810,410
Filing Date	March 26, 2004
First Named Inventor	Ismail Lakkis
Art Unit	2611
Examiner Name	Kevin Kim
Attorney Docket Number	00287

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)			
		US- 6034987	03-2000	Chennakeshu et al.	
		US- 6049707	04-11-2000	Buer et al.	
		US- 6064663	05-16-2000	Honkasalo et al.	
		US- 6067290	05-23-2000	Paulraj et al.	
		US- 6078576	06-20-2000	Schilling et al.	
		US- 6081562	06-2000	He et al.	
		US- 6078607	06-20-2000	Monroe et al.	
		US- 6108317	08-2000	Jones et al.	
		US- 6128276	10-2000	Agee	
		US- 6128330	10-03-2000	Schilling	
		US- 6128387	10-2000	Hsieh	
		US- 6128473	10-03-2000	Ritzen et al.	
		US- 6133876	10-2000	Fullerton et al.	
		US- 6141374	10-2000	Burns	
		US- 6154486	11-28-2000	Scott et al.	
		US- 6191724	02-2001	McEwan	
		US- 6198327	03-06-2001	Takahashi	
		US- 6198989	03-2001	Tankhilevich et al.	
		US- 6215777	04-2001	Chen et al.	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T ⁶
		Country Code ³ -Number ⁴ -Kind Code ⁵ (if known)				

Examiner
SignatureDate
Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Sheet 05

of 18

Complete if Known

Application Number	10/810,410
Filing Date	March 26, 2004
First Named Inventor	Ismail Lakkis
Art Unit	2611
Examiner Name	Kevin Kim
Attorney Docket Number	00287

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)			
		US- 6215814	04-10-2001	Yitalo et al.	
		US- 6222832	04-2001	Proctor	
		US- 6256508	07-2001	Nakagawa	
		US- 6259687	07-10-2001	Lomp et al.	
		US- 6298092	10-02-2001	Heath, Jr.	
		US- 6300903	10-2001	Richards et al.	
		US- 6301681	10-09-2001	Zongbo et al.	
		US- 6307868	10-2001	Rakib et al.	
		US- 6310866	10-30-2001	Kronstedt et al.	
		US- 6317411	11-13-2001	Whinnet et al.	
		US- 6032033	02-2000	Mprros et al.	
		US- 6336613	04-2002	Sommer et al.	
		US- 6337878	01-08-2002	Endres	
		US- 6351499	02-26-2002	Paulraj et al.	
		US- 6356607	03-2002	Scott, et al.	
		US- 6363107	03-26-2002	Scott	
		US- 6373827	04-16-2002	Tayebi et al.	
		US- 6388997	05-2002	Logan	
		US- 6392500	05-2002	McCallister et al.	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T ⁶
		Country Code ³ -Number ⁴ -Kind Code ⁵ (if known)				

Examiner
SignatureDate
Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Sheet 06

of 18

Complete if Known

Application Number	10/810,410
Filing Date	March 26, 2004
First Named Inventor	Ismail Lakkis
Art Unit	2611
Examiner Name	Kevin Kim
Attorney Docket Number	00287

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)			
		US- 6392500	05-2002	McCallister et al.	
		US- 6430170	08-2002	Saints et al.	
		US- 6459728	10-01-2002	Bar-David et al.	
		US- 6466610	10-15-2002	Schilling	
		US- 6473467	10-29-2002	Wallace et al.	
		US- 6501841	12-31-2002	Home	
		US- 6526090	02-25-2003	Papasakellariou	
		US- 6529488	07-2001	Urs et al.	
		US- 6529545	03-04-2003	Tirola et al.	
		US- 6549567	04-2003	Fullerton	
		US- 6549588	04-15-2003	Neubauer	
		US- 6560463	05-2003	Santhoff	
		US- 6563856	05-2003	O'Shea et al.	
		US- 6570912	05-2003	Mirfakhraei	
		US- 6570919	05-27-2003	Lee	
		US- 6603818	08-05-2003	Dress Jr.	
		US- 6606350	08-12-2003	Dress Jr.	
		US- 6630897	10-07-2003	Low et al.	
		US- 6650910	11-18-2003	Mazur et al.	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T ⁶
		Country Code ³ -Number ⁴ -Kind Code ⁵ (if known)				

Examiner
SignatureDate
Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Sheet 07

of 18

Complete if Known

Application Number	10/810,410
Filing Date	March 26, 2004
First Named Inventor	Ismail Lakkis
Art Unit	2611
Examiner Name	Kevin Kim
Attorney Docket Number	00287

U. S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)			
		US- 6657551	12-2003	Huckaba et al.	
		US- 6683955	01-27-2004	Horne	
		US- 6690723	02-10-2004	Goose et al.	
		US- 6690741	02-2004	Larrick et al.	
		US- 6700881	03-2004	Kong et al.	
		US- 6700939	03-2004	McCorkle et al.	
		US- 6701129	03-02-2004	Hashem et al.	
		US- 6754294	06-22-2004	Adireddy et al.	
		US- 6757543	06-29-2004	Moran et al.	
		US- 6763075	07-13-2004	Zhengdi	
		US- 6771976	08-03-2004	Koyama	
		US- 6781470	08-24-2004	Rogerson	
		US- 6785323	08-2004	Proctor, Jr.	
		US- 6795424	09-2004	Kooper et al.	
		US- 6810259	10-2004	Zhang	
		US- 6842495	01-11-2005	Jaffe et al.	
		US- 6851086	02-2005	Szymanski	
		US- 6856652	02-2005	West et al.	
		US- 6931078	08-2005	McCorkle et al.	

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T ⁶
		Country Code ³ -Number ⁴ -Kind Code ⁵ (if known)				

Examiner
SignatureDate
Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶ Applicant is to place a check mark here if English language translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Sheet 08

of 18

Complete if Known

Application Number	10/810,410
Filing Date	March 26, 2004
First Named Inventor	Ismail Lakkis
Art Unit	2611
Examiner Name	Kevin Kim
Attorney Docket Number	00287

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)			
		US- 6937667	08-30-2005	Fullerton et al.	
		US- 6904110	06-2005	Trans et al.	
		US- 6941378	09-2005	Apostolopoulos et al.	
		US- 6944232	09-2005	Koga et al.	
		US- 6946981	09-20-2005	Zilberman et al.	
		US- 6947498	09-2005	Reed	
		US- 6952444	10-2005	Segal et al.	
		US- 6952456	10-2005	Aiello et al.	
		US- 6990348	01-24-2006	Benveniste	
		US- 7046187	05-16-2006	Fullerton et al.	
		US- 7050508	05-2006	Sorrells	
		US- 7072413	07-2006	Walton et al.	
		US- 7076168	07-2006	Shattil	
		US- 7076927	07-2006	Trpkovski	
		US- 7088795	08-2006	Aiello et al.	
		US- 7123843	10-2006	Melick et al.	
		US- 7145954	12-2006	Pendergrass et al.	
		US- 7154955	12-2006	Suwa et al.	
		US- 7206349	04-2007	Linnartz et al.	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T ⁶
		Country Code ³ -Number ⁴ -Kind Code ⁵ (if known)				

Examiner
SignatureDate
Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Sheet 09

of 18

Complete if Known

Application Number	10/810,410
Filing Date	March 26, 2004
First Named Inventor	Ismail Lakkis
Art Unit	2611
Examiner Name	Kevin Kim
Attorney Docket Number	00287

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)			
		US- 7209523	04-2007	Larrick et al.	
		US- 7236757	06-2007	Raghavan et al.	
		US- 2001/0017563	08-30-2001	Kim	
		US- 2001/0019282	09-06-2001	Kuhne	
		US- 2001/0026584	10-2001	Sommer et al.	
		US- 2001/0025361	09-27-2001	Kim	
		US- 2005/0053121	03-2005	Lakkis	
		US- 2005/0084031	04-21-2005	Rosen et al.	
		US- 2005/0105594	05-2005	Giannakis et al.	
		US- 2005/0157782	07-2005	Lakkis	
		US- 2005/0159129	07-21-2005	Iida	
		US- 2005/0207351	09-22-2005	Inagawa	
		US- 2006/0039317	02-2006	Subramanian et al.	
		US- 2006/0193373	08-2006	Agee et al.	
		US- 2006/0291537	12-2006	Fullerton et al.	
		US- 2007/0053471	03-2007	Feher	
		US- 2004/0234147	11-2004	Malvar	
		US- 2004/0239562	12-02-2004	Schantz	
		US- 2005/0031045	02-2005	Mayor et al.	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T ⁶
		Country Code ³ -Number ⁴ -Kind Code ⁵ (if known)				

Examiner
SignatureDate
Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Sheet 10

of 18

Complete if Known

Application Number	10/810,410
Filing Date	March 26, 2004
First Named Inventor	Ismail Lakkis
Art Unit	2611
Examiner Name	Kevin Kim
Attorney Docket Number	00287

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)			
		US- 2001/0050623	12-2001	Kalman	
		US- 2001/0030973	10-18-2001	Lomp et al.	
		US- 2001/0038674	11-2001	Trans	
		US- 2001/0040931	11-2001	Samueli et al.	
		US- 2001/0048333	11-2001	Samueli et al.	
		US- 2002/0034191	03-21-2002	Shattil	
		US- 2002/0042899	04-11-2002	Tzannes et al.	
		US- 2002/0048333	04-2002	Ahmed et al.	
		US- 2002/0064245	05-2002	McCorkle	
		US- 2002/0097790	07-2002	Dress et al.	
		US- 2002/0114355	08-22-2002	Kim et al.	
		US- 2002/0118783	08-2002	Cripps et al.	
		US- 2002/0126769	09-2002	Jett et al.	
		US- 2002/0146994	10-2002	Marrah et al.	
		US- 2002/0159425	10-2002	Uesugi et al.	
		US- 2002/0176511	11-2002	Fullerton et al.	
		US- 2002/0190786	12-192002	Yoon et al.	
		US- 2003/0033575	02-13-2003	Richardson et al.	
		US- 2003/0040329	02-27-2003	Yona et al	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T ⁶
		Country Code ³ -Number ⁴ -Kind Code ⁵ (if known)				

Examiner
SignatureDate
Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Sheet 11

of 18

Complete if Known

Application Number	10/810,410
Filing Date	March 26, 2004
First Named Inventor	Ismail Lakkis
Art Unit	2611
Examiner Name	Kevin Kim
Attorney Docket Number	00287

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)			
		US- 2003/0048840	03-2003	Ling et al.	
		US- 2003/0053555	03-20-2003	McCorkle et al.	
		US- 2003/0067963	04-10-2003	Miller et al.	
		US- 2003/0079171	04-24-2003	Coe	
		US- 2003/0091100	05-2003	El Nahas El Homsy et al.	
		US- 2003/0108133	06-12-2003	Richards	
		US- 2003/0104788	06-05-2003	Kim	
		US- 2003/0128776	07-2003	Rawlins et al.	
		US- 2003/0147655	08-07-2003	Shattil	
		US- 2003/0161411	08-2003	McCorkle et al.	
		US- 2003/0193970	10-16-2003	Kim et al.	
		US- 2003/0202537	10-2003	Rogerson et al.	
		US- 2003/0227980	12-11-2003	Batra et al.	
		US- 2004/0001540	01-01-2004	Jones	
		US- 2004/0008617	01-15-2004	Dabak et al.	
		US- 2004/0034828	02-19-2004	Hocevar	
		US- 2004/0052312	03-2004	Matero	
		US- 2004/0047430	03-2004	McCarty	
		US- 2004/0057575	03-25-2004	McCarty	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T ⁶
		Country Code ³ -Number ⁴ -Kind Code ⁵ (if known)				

Examiner
SignatureDate
Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Sheet 12

of 18

Complete if Known

Application Number	10/810,410
Filing Date	March 26, 2004
First Named Inventor	Ismail Lakkis
Art Unit	2611
Examiner Name	Kevin Kim
Attorney Docket Number	00287

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)			
		US- 2004/0070433	04-2004	Adams et al.	
		US- 2004/0071249	04-2004	Schell	
		US- 2004/0086027	05-2004	Shattil	
		US- 2004/0087291	05-06-2004	Wada	
		US- 2004/0098659	05-20-2004	Bjerke et al.	
		US- 2004/0141561	07-2004	Santhoff et al.	
		US- 2004/0151269	08-05-2004	Balakrishnan	
		US- 2004/0153938	08-05-2004	Okamura et al.	
		US- 2004/0161064	08-19-2004	Brethour et al.	
		US- 2004-0174928	09-09-2004	Siwiak	
		US- 2004/0176121	09-2004	Zhou	
		US- 2004/0213351	10-2004	Shattil	
		US- 2004/0213352	10-2004	Lundby et al.	
		US- 2004/0218581	11-04-2004	Cattaneo	
		US- 2004/0218683	11-04-2004	Batra et al.	
		US- 2004/0224656	11-2004	Mimura et al.	
		US-			
		US-			
		US-			

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T ⁶
		Country Code ³ -Number ⁴ -Kind Code ⁵ (if known)				

Examiner
SignatureDate
Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(Use as many sheets as necessary)</i>		Complete if Known	
		Application Number	10/810,410
		Filing Date	March 26, 2004
		First Named Inventor	Ismail Lakkis
		Art Unit	2611
		Examiner Name	Kevin Kim
Sheet 13	of 18	Attorney Docket Number	00287

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		AIJANEN, JUSSI et al. "Frame Configuration Impact to the Performance of ULTRA TDD System" University of Jyvaskyla, Dep. of Mathematical Information Technology, pp. 1-5.	
		ARGYROPOULOS et al., Dynamic Channel Allocation in Interference-Limited Cellular SYstems with Uneven Traffic Distribution, IEEE Transactions on Vehicular Technology, Vol. 48, No. 1, January 1999, Pages 224-232.	
		BACCARELLI et al., A Novel Reduced-Complexity MAP Equalizer Using Soft-Statistics for Decision-Feedback ISI Cancellation, INFO-COM Dpt. University of Rome, Italy, 5 pages.	
		BAHREINI et al., Alternate PHY Proposal for High Rate 802.15.3 Draft Standard, IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs), Doc:IEEE802.15-03/127r0, March 2, 2003, 12 pages.	
		BAIER, PAUL WALTER et al. "Taking the Challenge of Multiple Access for Third-Generation Cellular Mobile Radio Systems - A European View" IEEE Communications Magazine, February 1996, pp. 82-89.	
		BALAKRISHNAN, Bidirectional Decision Feedback Equalization and MIMO Channel Training, A Dissertation presented to the faculty of Graduate School of Cornell University, August 2002, 159 pages.	
		BLOGH et al., Dynamic Channel Allocation Techniques Using Adaptive Modulation and Adaptive Antennas, IEEE Journal on Selected Areas in Communication, Vol. 19, No. 2, February 2001, Pages 312-321.	
		BOLCSKEI et al., Space-Frequency Coded MIMO-OFDM with Variable Multiplexing-Diversity Tradeoff, IEEE 2003, Pages 2837-2841.	
		BOUKERCHE et al., Distributed Dynamic Channel Allocation for Mobile Communication System, Proceedings of the Eighth International Symposium on Modeling, Analysis and Simulation of Computer and Telecommunications Systems, IEEE 2000.	
		BROWN, Dynamic Channel Assignment in Shotgun Cellular Systems, Proc. of 1999 IEEE Radio and Wireless Conference (RAWCON99), Pages 147-150.	

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Complete if Known

Sheet

14

of

18

Application Number

10/810,410

Filing Date

March 26, 2004

First Named Inventor

Ismail Lakkis

Art Unit

2611

Examiner Name

Kevin Kim

Attorney Docket Number

00287

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		CELIK, A New Method to Reduce Error Propagation In Decision Feedback Equalizer, IJCI Proceedings of International Conference on Signal Processing, ISSN 1304-2386, Vol. 1, No. 2, September 2003, Pages 213-216.	
		CHAUDHURY, PRODIP et al. "The 3GPP Proposal for IMT-2000" IEEE Communications Magazine, December 1999, pages 72-81.	
		CHERUBINI, GIOVANNI "Hybrid TDMA/CDMA Based on Filtered Multitone Modulation for Uplink Transmission in HFC Networks" IEEE Communications Magazine, October 2003, pp. 108-115.	
		CHIANI, Introducing Erasures in Decision-Feedback Equalization to Reduce Error Propagation, IEEE Transactions on Communications, Vol. 45, No. 7, July 1997, Pages 757-760.	
		CHOI et al., Receivers With Chip-Level Decision Feedback Equalizer for CDMA Downlink Channels, IEEE Transactions on Wireless Communications, Vol. 3, No. 1, January 2004, Pages 300-314.	
		"COMPTON, Jr., "'A New Algorithm To Optimize Barker Code Sidelobe SuppressionFilters', IEEE Log No. 36738, December 13, 1989, pgs. 673 -677 and pg. 921."	
		CRAMER, et al., Impulse Radio Multipath Characteristics and Diversity Reception, IEEE 1998, 5 page	
		CWTS WG1, Method and Principles of Uplink Synchronization, TSG-RAN Working Group 1 (Radio) meeting #5, Cheju, South Korea, June 1-4, 1999, 6 pages.	
		DREWES et al., Adaptive Equalization for Wireless ATM, 13th International Conference on Digital Signaling Processing (DSP '97), Santorini, Grec, July 1997, 4 pages.	
		ERTEL, et al., Overview of Spatial Channel Models for Antenna Array Communication Systems, IEEE Personal Communications, February 1998, Pages 10-22.	

Examiner
Signature

Date

Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(Use as many sheets as necessary)</i>		Complete if Known	
		Application Number	10/810,410
		Filing Date	March 26, 2004
		First Named Inventor	Ismail Lakkis
		Art Unit	2611
		Examiner Name	Kevin Kim
Sheet 15	of 18	Attorney Docket Number	00287

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		FUJII et al., Implementation of Space-Time Equalizer Using Multiple Single-Constrained SMI Array Processors and MLSE, IEEE Transactions on Wireless Communications, Vol. 1, No. 2, April 2002, Pages 333-341.	
		GALLAGER, Low-Density Parity-Check Codes, Cambridge, Massachussets, July, 1963, 90 pages.	
		GALLI, Optimal Non-Linear MMSE Channel Estimation for Broadband Wireless TDMA Systems and Necessity of Soft Decisions, Telcordia Technologies Inc, Morristwown, New Jersey, 7 pages.	
		GUILLOUD, Generic Architecture for LDPC Codes Decoding, Telecom Paris, July, 2004, 174 pages.	
		HAAS, HARALD "A Dynamic Channel Assignment Algorithm for a Hybrid TDMA/CDMA - TDD Interface Using the Novel TS-Operating Technique" IEEE Journal on Selected Areas in Communications, Vol. 19, No. 10, October 2001, pp. 1831-1846.	
		HACKETT, Correspondence: An Efficient Algorithm for Soft-Decision Decoding of the (24, 12) Extended Golay Code, IEEE Transactions on Communications, Vol. COM-29, No. 6, June 1981, 3 pages.	
		HUNZIKER et al., Evaluation of Coding and Modulation Schemes based on Golay Complementary Sequences for Efficient OFDM Transmission, Swiss Federal Institute of Technology, Zurich, Switzerland, 6 pages.	
		KAHOL et al., Adaptive Distributed Dynamic Channel Allocation for Wireless Networks, Computer Science Technical Report CS-98-105, May 27, 1998, 11 pages.	
		KARKOOTI, Semi-Parallel Architectures For Real-Time LDPC Coding, A Thesis Submitted in Partial Fulfillment of the Requirements for the Degree Master of Science, Rice University, Houston, Texas, May, 2004, 78 pages.	
		KIM et al., Performance Gain of Smart Antennas with Diversity Combining at Handsets for the 3GPP WCDMA System, 13th International Conference on Wireless Communications (Wireless 2001), July 2001, Pages 235-242, Calgary, ALberta, Canada.	

Examiner Signature	Date Considered
--------------------	-----------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Complete if Known

Sheet 16 of 18	Application Number	10/810,410	
	Filing Date	March 26, 2004	
	First Named Inventor	Ismail Lakkis	
	Art Unit	2611	
	Examiner Name	Kevin Kim	
		Attorney Docket Number	00287

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		LE MARTRET, et al., All-Digital Impulse Radio with Multiuser Detection for Wireless Cellular Systems, IEEE Transactions on Communications, Vol. 50, No. 9, September 2002, Pages 1440-1450.	
		KRISHNAMACHARI et al., Ultra High Speed Digital Processing for Wireless Systems using Passive Microwave Logic, The Cooper Union for the Advancement of Science and Art, RAWCON'98 Proceedings, 1998 IEEE, New York, New York, 4 pages.	
		LEVINE et al., Implementation of Near Shannon Limit Error-Correction Codes Using Reconfigurable Hardware, Carnegie Mellon University, Pittsburg, Pennsylvania, 10 pages.	
		LIDA et al., IEEE 2005 Digest of Technical Papers, "A 3 to 5GHz CMOS DSSS UWB Transceiver for WPANs", Volume 48, Section 11.8, February 6, 2005, Pages 214-215.	
		LIU et al., Space-Time-Frequency Coded OFDM Over Frequency-Selective Fading Channels, IEEE Transactions on Signal Processing, Vol. 50, No. 10, October 2002, Pages 2465-2476.	
		LOPES et al., Exploiting Error-Control Coding in Blind Channel Estimation, School of Electrical and Computer Engineering, Georgia Institute of Technology, 6 pages.	
		LOPEZ-VALCARCE, Realizable Linear and Decision Feedback Equalizers: Properties and Connections, IEEE Transactions on Signal Processing Vol. 52, No. 3, March 2004, Pages 757-773.	
		LU et al., LDPC-Based Space-Time Coded OFDM Systems Over Correlated Fading Channels: Performance Analysis and Receiver Design, IEEE Transactions on Communications, Vol. 50, No. 1, January 2002, Pages 74-88.	
		LU, et al., A Practical Implementation of Broadband Multiple Antenna Systems, 0-7803-4788-9/98 IEEE 1998, 5 pages.	
		M'SIR et al., Designing a High Speed Decoder for Cycling Codes, Proceedings of the 10th IEEE International On-Line Testing Symposium (IOTS'04), 6 pages, France.	

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Complete if Known

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary)	Application Number		10/810,410	
	Filing Date		March 26, 2004	
	First Named Inventor		Ismail Lakkis	
	Art Unit		2611	
	Examiner Name		Kevin Kim	
	Attorney Docket Number		00287	
Sheet	17	of	18	

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		LAM, An Efficient Distributed Channel Allocation Algorithm Based on Dynamic Channel Boundaries, IEEE 1996, Pages 236-243.	
		OLSON, Examining and Modifying Marker Generator Output, Jackson Harbor Press, October 26, 1999, 5 pages.	
		PEARSON, Complimentary Code Keying Made Simple, Intersil Corporation, Application Note AN9850.1, May 2000, 7 pages.	
		PNG et al., Performance Studies of a Multi-band OFDM System Using a Simplified LDPC Code, 0-7803-8373-7/04 IEEE 2004, Pages 376-380, Singapore.	
		PRASAD , et al., An Overview of CDMA Evolution Toward Wideband CDMA, IEEE Communications Survey, Fourth Quarter 1998, Vol. 1 No. 1, 28 pages.	
		REUTER et al., Mitigating Error Propagation Effects in a Decision Feedback Equalizer, IEEE Transactions on Communications, Vol. 49, No. 11, November 2001, Pages 2028-2041.	
		RICHARDSON, K. W. "UMTS Overview" , Electronics & Communication Engineering Journal, June 2000, pp. 93-101.	
		RIHACCZEK et al., "Range Sidelobe Suppression for Barker Codes" IEEE Transactions on Aerospace and Electronic Systems", Vol. 7, No. 6, Nov. 1971, pgs. 1087 - 1092.	
		ROHLING et al., "Mismatched-Filter Design for Periodical Binary Phased Signals", IEEE Transactions on Aerospace and Electronic Systems, Vol. 25, No. 6, Nov. 1989, pgs. 890 - 896. C. Cantoni, R.T.	
		RYAN, An Introduction to LDPC Codes, University of Arizona, Tucson, Arizona, August 19, 2003, 23 pages.	

Examiner Signature		Date Considered	
---------------------------	--	------------------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(Use as many sheets as necessary)</i>		Complete if Known	
		Application Number	10/810,410
		Filing Date	March 26, 2004
		First Named Inventor	Ismail Lakkis
		Art Unit	2611
		Examiner Name	Kevin Kim
Sheet 18	of 18	Attorney Docket Number	00287

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		SALGADO et al., Spectrum Sharing Through Dynamic Channel Assignment for Open Access to Personal Communications Services, Proc. of IEEE Intl. Communications Conference (ICC), June 1995, Pages 417-422.	
		SCHLAGENHAUFER, Equalizer Structures for Spread Spectrum Multiuser Systems, Calgary, Alberta, April 2001, Background Section 1.1 Pages 2-6 & Chapter 4 Pages 134-179.	
		SCHOBBER et al., Adaptive Noncoherent DFE for MDPSK Signals Transmitted over ISI Channels, IEEE Transactions on Communications, Vol. 48, No. 7, July 2000, Pages 1128-1140.	
		VERDU, Wireless Bandwidth in the Making, Multiple Access for Broadband Wireless Networks, IEEE Communications Magazine, July 2000, Pages 53-58.	
		WINTERS, On the Capacity of Radio Communication Systems with Diversity in a Rayleigh Fading Environment, IEEE Journal on Selected Areas in Communication, Vol. SAC-5, No. 5, June 1987, Pages 871-878	
		WINTERS, Optimum Combining for Indoor Radio Systems with Multiple Users, IEEE Transactions on Communications, Vol. COM-35, No. 11, November 1987, Pages 1222-1230	
		WINTERS, Optimum Combining in Digital Mobile Radio with Cochannel Interference, IEEE Journal on Selected Areas in Communications, Vol. SAC-2, No. 4, July 1984, Pages 528-539	
		WINTERS, Smart Antennas for Wireless Systems, IEEE Personal Communications, February 1998, Pages 23-27.	
		ZHANG et al., A 54 MBPS (3,6)-Regular FPGA LDPC Decoder, University of Minnesota, Minneapolis, Minnesota, 6 pages.	
		ZHOU et al., Space-Time Coding with Maximum Diversity Gains Over Frequency-Selective Fading Channels, IEEE Signal Processing Letters, Vol. 8, No. 10, October 2001, Pages 269-272.	

Examiner Signature	Date Considered
--------------------	-----------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.